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ABSTRACT

Reported is the progress of a vocational rehabilitation program for severely disabled students at the University of California, Berkeley. The Cowell Hospital Project provides housing and special assistance for quadriplegics with an especially favorable academic prognosis. The report summarizes the project's funding, type of clients, admission procedures, assistance provided to handle the activities of daily living, medical management, rehabilitation counseling services, costs, and future. It is noted that the academic and vocational achievement of clients is above that of the average university student and/or rehabilitation client. Appended information includes a table of client characteristics, case cost estimates, reprints of news articles on the project, the Cowell Residence Program admission procedure and a student questionnaire, evaluative comments and recommendations by project participants, and brief case summaries of the 18 clients currently served by the project. (See ED 044 865/EC 030 630 for a previous report on this project.) (KW)

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REHABILITATION RESEARCH REPORT

Robert E. Howard, Director
DEPT. OF REHABILITATION
Human Relations Agency
State of California

Vocational Rehabilitation Of The Severely Disabled In A University Setting

Second Year Report

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Second Year Report

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I. INTRODUCTION

The rehabilitation of the severely disabled quadriplegic represents many unique and serious problems for a rehabilitation services delivery system. When this rehabilitation is to take place in the setting of a major university, additional problems arise.

It seemed appropriate to apply for a Section 3 grant to fund innovative services since the project sought "the development of methods or techniques, which are new in the state, for providing vocational rehabilitation services for handicapped individuals, or ... are specially designed for development of, or provision for, new or expanded vocational rehabilitation services for groups of handicapped individuals having disabilities which are catastrophic or particularly severe." (Vocational Rehabilitation Act, Section 3, Paragraph 2.)

Although the project takes place in a university setting, the emphasis is not academic. The emphasis is on training and assistance to achieve maximum independence while pursuing undergraduate and graduate professional training. Such training is to lead to higher paying employment commensurate with the economic needs of the client such as the hiring of an attendant and housekeeper. This was to be accomplished by: (1) establishing a special on-campus residence for about 20 disabled students within Cowell Hospital on the Berkeley campus of the University of California, (2) providing a full-time Rehabilitation Nurse, and (3) assigning a full-time Rehabilitation Counselor to the program.

II. FUNDING

The proposal was accepted for funding from February 1, 1968, to January 31, 1973 at a projected yearly cost of about $35,000 not including the Counselor who was to be provided by the local District Office. The project received Section 3 funds until July 1, 1970, at which time it was subsumed under the Department's general, Section 2, base program funding. The project is now continuing under Section 2. A final report will be prepared in 1973.

III. PREVIOUS REHABILITATION RESEARCH

The Social and Rehabilitation Services branch of HEW, through its Division of Research and Demonstration Grants, has funded over a dozen research and demonstration projects concerned with the problems of quadriplegia. Most of these studies were related to the severe medical and psychiatric problems associated with this disability, attempts to develop special placement services for quadriplegics, vocational adjustment, architectural barriers investigations, and assessments of the needs of the quadriplegic. (See the attached list of references on page 10.) When vocational services were provided in many of these studies, they sought to develop home-bound or sheltered workshop manufacturing skills. One of the innovative contributions of the Cowell Hospital Project, which

is reported on here, is its attempt to develop high-order vocational skills which require extensive academic training. This was based on the belief that only higher paying employment could sufficiently offset the economic burden of this disability and thus enable the client to achieve maximum independence.

Up till the recent past, services for the quadriplegic have centered around medical and psychiatric problems. It was sometimes found that secondary psychological handicaps are formed which cause limitations that exceeded the primary handicapping condition (Traxler, 1968). In some cases suicide risk is very real. The catastrophic impact of quadriplegia on bodily function was not only an overwhelming situation for the patient but also for the Rehabilitation Counselor. It is only within the recent past, when the medical management of quadriplegia became successful, that the quadriplegic was seen as an appropriate client for the rehabilitation worker. "Prior to recent advances in medicine and medical management the quadriplegic did not long survive the spinal injury responsible for his disability" (Rusk, 1963). "Only ten years ago the quadriplegic was rarely served by vocational rehabilitation agencies, which assumed that their disability ruled out the possibility of successful employment" (Siegel, 1969). "The considerable success in treatment of paraplegic veterans gave impetus to the application of newly discovered techniques to problems of civilians with paraplegia" (Spangler, 1967).

IV. PREVALENCE OF QUADRIPLEGIA

Quadriplegia is defined as the paralysis of both the lower and upper extremities resulting from injury or disease involving the spinal cord at the cervical level.

There is very little information available regarding the prevalence of spinal cord injury or disease among the civilian population. However, in spite of the tremendous decline in poliomyelitis and increased organized programs for safety in sports and on the highways, sports and automobile accidents will continue to produce a significant number of persons afflicted with traumatic quadriplegia. A survey conducted by the National Paraplegic Foundation found that a large portion of the cases of paraplegia and quadriplegia were due to traumatic injury. "Sport injuries (diving, football, etc.) were responsible for one-fourth of the instances of traumatic quadriplegia" among the cases studied (Spangler, 1967). The number of cases due to auto accidents has also risen. There seems to be a complementary statistical relationship whereby the decreasing proportion of cases of paralysis due to poliomyelitis is being offset by an increase in the proportion of cases due to auto accidents.

V. DESCRIPTION OF CLIENTS

The eighteen clients served in the Cowell Hospital Project do not represent the average quadriplegic. They represent a group of quadriplegics with an especially favorable academic prognosis. To be admitted to the Cowell Hospital Project each candidate must have demonstrated an ability to succeed at college level academic work at home and must have no major medical management problems. That is, he must have progressed beyond the need for intensive medical therapy, and his condition should be relatively stable and not deteriorating. This would preclude the acceptance of individuals with

a recent on-set of quadriplegia. Although most of the students accepted have unique medical problems and no students are totally free of medical problems, this innovation project sought a balance between medical management and academic success.

As seen in the attached table of client characteristics (page 11), the majority of project clients are men in their early 20's who were disabled in their teens, usually through a traumatic cause associated with a sport or auto accident. The courage, tenacity, and motivation of these young men and women cannot be over-stressed. Quadriplegia is a catastrophic disability for anyone, but most especially for an active, involved teenager.

The table also shows that all students have high vocational goals. The average projected salary of the group is over $9,000. The average salary of the two successful graduates is $10,000 annually.

VI. ADMISSION TO THE UNIVERSITY

Since there is presently no reliable way of predicting academic success among quadriplegics, it was required that each candidate must have experienced at least one year of successful college training. Academic acceptance for admission to the University of California at Berkeley is a prerequisite to joining the Cowell Hospital live-in program. Admission to the University is accomplished through the Admission Office by the client with the assistance of his local counselor.

VII. ADMISSION TO THE PROJECT

When referred to the innovation project, most of the candidates were already clients of the Department of Rehabilitation. Many came from rural areas where they might look forward to completing Junior College or perhaps even a full four year college curriculum. However, the likelihood of successful employment commensurate with the economic needs of the quadriplegic seems unlikely with a Junior College degree. Among those few who might have continued through to their Bachelor's degree, many would have a limited choice of careers. Whenever possible, the project sought students with graduate school potential, though this was not essential.

The Cowell Project has become a prototype for other programs that are currently in planning stages throughout the county. Mail is received almost daily from persons interested in the project and from institutions who are planning similar operations. Almost weekly, interested persons from throughout the country have visited the hospital in order to gain first-hand information regarding the project and its success. Because of this and the good publicity the project has been receiving in the media (see attached reprints pages 13-15) the project receives inquiries from other State agencies and hospitals who have potential clients. As potential students become informed of the details of the program a self-screening process ensues. Many potential students, realizing the tremendous responsibility placed on them in the program, screen themselves out.

When a potential program participant is already a client of the Department of Rehabilitation within the State of California, the Program Procedure,

as outlined on page 16 is adhered to. The questionnaire attached to the Program Procedure, pages 17-19, is sent to all serious candidates for the program.

VIII. ACTIVITIES OF DAILY LIVING

Perhaps the major contribution of this innovation project is providing the comprehensive management necessary to handle problems associated with activities of daily living. The project is able to do this because of the residential setting provided by the Cowell Hospital Project at the University of California in Berkeley. In this setting a full-time Rehabilitation Nurse is on duty at the hospital. She can train the students in their own care and teach them how to train attendants who could be hired with welfare monies. Once the student becomes economically independent attendant services can be purchased by the handicapped individual himself. The Rehabilitation Nurse, in addition to hospital duty, makes her services available to those students who move into the community. This service has been of inestimable value at many critical times.

The full-time Rehabilitation Nurse assigned to the project and paid out of State Department of Rehabilitation funds is, in effect, serving the entire severely disabled population on campus. Her knowledge regarding medical procedures as they relate to severely disabled students has become a valuable reservoir from which severely disabled students on campus but not in the Cowell Hospital Project can draw. She is, in effect, serving a population of some twenty-five to thirty severely disabled students on campus, which far exceeds the number of students actually at Cowell Hospital.

The Cowell Hospital live-in program, to the maximum feasible extent, attempts to provide a home-like residential setting. The area of the hospital in which these students live does not at all present the stark appearance one would expect in a hospital. Rather, it contains a series of individual private rooms colorfully painted and well-lighted where each student can have privacy and atmosphere conducive to study, and yet have ready access to their fellow students as well as the medical services provided by the hospital and the Rehabilitation Nurse.

Most of the boarders require from two to four hours per day of attendant care. The mobility problems were overcome by the use of motorized wheelchairs and a physical environment at the university which, except for some hilly terrain, made it possible for the disabled student to have access to the entire campus. Elevators, curb ramps, and friendly fellow students reduced the mobility problem to a minimum. In some college campuses the mere physical environment alone would make such a project as this impossible.

IX. MEDICAL MANAGEMENT

Although each case of quadriplegia has its own unique pattern of medical needs, there are certain problems common to most cases. These are problems related to the partial functional status of bladder and bowel, breathing involvement, sometimes including a non-functional cough, osteoporosis, pressure sores, contractures, and random skin ailments such as dermatitis and poison oak. The students in the Cowell Program presented an additional problem. Since they are an exceptionally intelligent group

of young men and women, their knowledge of quadriplegia and related skin, bowel, bladder, and pain management is often extensive. However, many did not realize the hazards of self-doctoring or the need for careful diagnostic work. After a haphazard self-diagnosis many students would dip into their own medical reserve or even borrow medication from each other. They were apt to try treating a cold with something to cure a bladder infection. Prompt and active teaching on the part of the Rehabilitation Nurse together with better housekeeping techniques were required to solve this problem.

In the group situation general hygiene was often less than desirable. Attendants and students did not know, for example, the relationship of "contaminated" clothing to the spread of poison oak, or the importance of wearing a mask when the first cold symptoms appear, in order to protect a quadriplegic to whom a common cold can be a serious matter since he may not have a functional cough. Basins were not always kept clean and sterilized promptly and properly. Once again corrective intervention on the part of the Rehabilitation Nurse was necessary to ameliorate this problem.

During the last year of the program there has been a sharp reduction in the incidence of infections of all kinds.

a. Bladder Hygiene

The medical staff had advocated the use of phenol solution for bladder instillations to reduce infection. However, this was not implemented immediately by making up the solution and encouraging the students to use it. It took weeks of patient teaching to convince the students of the value of this. However, it has proven extremely useful in reducing bladder infections and the students have become faithful in its use. (The solution is prepared by the Nurse who, with careful technique, adds phenol to sterile water, 1:500.) For two students whose bladders were chronically infected to the point of non-function, surgery was performed to replace their bladders with a loop of bowel serving as a bladder (Ileal-bladder). These surgeries have shown excellent results.

b. Physio-Therapy

At the start of the program there was no concerted plan for physical activity programming. The sole physical education equipment in the residence was a weighted pulley. At the present time a large room has been set aside for conversion into a gym with additional arm weights, standing table, regulation size and contruction exercise table with mat, plus a door bar with adjustable loops for training and strengthening for "depressing" (pressing down to shift weight) as well as preparing for transfers. The purchase of additional recreational and exercising equipment is anticipated in the near future.

These items are sources of great enjoyment as well as enormous benefits in maintenance of muscle tone and improved range of motion together with serving as excellent vehicles for the healthy discharge of emotional tension.

During the last year of the program a physio-therapy consultant spent six one-hour periods with each of the students evaluating them physically and functionally. Each was started on a personally designed program for

increasing useful functioning. Booklets were individually designed to include instructions or diagrams for range of motion exercises. These booklets were tailored to individual abilities and needs and include complete instruction sheets for looping transfers, driver training preliminary practice, plus other basics such as skin care, hygiene, and other instructions. One student, who has graduated from the program, was able with the assistance of the consultant to perfect a loop transfer that makes him independent moving from bed to chair and vica versa.

c. Autonomic Dysreflexia

Autonomic dysreflexia (an unexplained, sudden, dysfunctional activation of the autonomic nervous system including a rapid increase in blood pressure which can be fatal) is a problem that diminishes in frequency as post injury time increases. However, it never disappears in the C5-6 quadriplegic. It is a particularly hazardous condition. If not treated effectively and promptly the blood pressure can go to 300/100 in the span of two minutes leading to a cerebro-vascular accident. A fully equipped emergency tray with instruction sheet is readily available at all times and the hospital staff is informed of its location.

d. Pulmonary Involvement

Since the use of intermittent positive pressure with compressed air (the Bird machine) is so effective in increasing pulmonary efficiency, and since the hospital has several for use by students, arrangements have been made for the residents in the project to use the Bird machine when needed at no charge. Considering the latest statistics, which show that pulmonary failure has replaced renal failure as the chief cause of death in quadriplegia, this takes on additional weight in long range terms as well as the immediate goals of aiding in adequate ventilation and in assisting to achieve a good functional cough.

e. Osteoporosis

Osteoporosis (softening and increased porosity of bone) is one of the long-term major problems of quadriplegia. It is generally felt that range of motion exercises, use of the tilt (standing) table, and physiotherapy are effective in combatting this problem. However, there is little data to measure this. Quadriplegics have this medical problem in common with astronauts. Clinical research to deal with this phenomenon in space travel will most certainly be applicable to the management of osteoporosis in quadriplegia. The Cowell boarders have unanimously agreed to be subjects for a project in which the rate of mineral loss from bone can be measured accurately and evaluation of various techniques to halt this can be accurately made. The first Proton scan was made in June and the second in September of 1970.

X. REHABILITATION COUNSELING SERVICES

A certain amount of realistic dependency is unavoidable in quadriplegia. However, it is the basic overall goal of this project to reduce dependency to a minimum by the application of rehabilitation counseling services, provided with openness and frankness, which coordinate and assure continuity between all the many services necessary to provide independence. Therefore, the Rehabilitation Counselor must relate to the

academic, medical, social, psychological, and vocational programs provided for the quadriplegic student. It is important that the Rehabilitation Counselor serve the client's needs in all of these areas without enhancing the client's dependency. This is especially so in serving the quadriplegic whose tendency to dependency is rather strong. Once this is overcome, however, the opposite reaction sometimes takes hold. Quadriplegic clients become very anxious to move out into the community, and many have succeeded. Some clients, however, in their rush toward independence, would move precipitously when they are not fully prepared. It is extremely important for the Rehabilitation Counselor, after dealing with the strong tendency toward dependence, not to over-estimate the client's ability for independent functioning in the community. The Cowell Residence Program is a transitory program which not only provides the client a residence which is convenient to the academic setting but also provides a setting wherein he can receive training in self-care and additionally learn to train attendants. However, "graduation" from the Cowell Residence can occur previous to graduation from the University. The transition to community living is greatly enhanced by the Rehabilitation Nurse who makes her services available to the students who manage to move into the community while still attending the University.

Up to the present time the residence program has not had more than twelve students boarding at any one time. The counselor caseload, of course, consists of both those students living in the residence and those in the community. Based on present experience, it appears that the residence program should not have any more than twelve students per nurse and twenty-four students per counselor since this is an intensive service program.

At the start, the program was experimental in nature. Thus, the staff had no sure indications of the amount of independence each student could be allowed. They were treated so solicitously, their situation was so structured and protective that militance and bitterness arose in some cases. Later, when the staff had more experience and each resident was treated less as a patient and more as a student, morale improved. The counselor then included the residents in discussions of decisions which would be affecting their entire future. (So too, students in the program have been provided an opportunity to attach a statement to this report. See page 20.) This further improved morale and the students joined together in a social organization - "The Rolling Quads" - which has been officially recognized by the University. The Rolling Quads have since sought and obtained Federal funding to set up their own office for services to handicapped students (see page 22).

XI. REHABILITATION COST - BENEFITS

As one would expect, the costs of such an extensive service program as this are relatively high. It costs the Department of Rehabilitation approximately $3,000 per month to operate this program. Total State costs, of course, would be higher when including welfare costs, Medi-Cal, university costs and personnel costs. Any estimation of cost per rehabilitation would be premature at this time since only two cases have been rehabilitated so far. However, a fairly good understanding of the cost-benefits relationships in this program can be derived from a overview of the individual cases themselves. The case abstracts on pages 23-27

and table 2 on page 12 show the welfare costs and the costs to the Department of Rehabilitation per client over the entire history of the case. One can add to this additional costs, but a full understanding of the cost-benefits dynamics in these cases cannot be achieved until one can estimate the cost savings subsequent to rehabilitation. For example, Client #4, who became disabled at age 18 due to a diving accident, was referred to the Department of Rehabilitation in 1964. In the approximately seven and one-half years this client was served by the Department, $10,739 was spent towards his rehabilitation. Of this, $1,079 was charged to the general base program and $9,660 was charged to the Cowell Project. Projecting additional services through 1973, at which time he should obtain a Master's degree, the total case cost will approximate $20,000. Since welfare costs without successful rehabilitation would amount to almost $6,000 a year, this client, when rehabilitated and no longer receiving welfare, would offset his rehabilitation costs by welfare savings in three years and two months.

By way of further example, note Client #17 who, during her teen years, was disabled in an automobile accident. After one year of college she was referred to the Department of Rehabilitation early in 1969 and it is anticipated that she will complete her academic training by obtaining a Master's degree sometime around 1972. If the Department of Rehabilitation provides another 20 months of service, the total expenditures on this client by the Department will have come to $11,680. Since her present welfare costs are approximately $5,400 per year, her rehabilitation costs can be offset in less than three years if she achieves employment at an expected salary of $9,000 a year.

The other case abstracts show similar relationships. The projected average cost per rehabilitation over the life of the case will be over $12,000. This is much more expensive when compared to the estimated average cost per rehabilitated client in California. However, it is apparent that without rehabilitation the welfare costs for such a catastrophic disability are also particularly high and average over $5,000 per year. Therefore, although it is a relatively expensive investment on the part of Rehabilitation to rehabilitate these clients in this setting with long-term plans, because of the very high welfare costs there are great fiscal benefits to be derived.

XII. FUTURE OF THE PROJECT

The Department of Rehabilitation - Cowell Hospital Project was originally proposed and funded as a five year project "in order to make it possible to explore fully the services needed to assist severely disabled clients to complete an academic program in a university setting" (grant application). Since the services provided by the project are no longer funded by Section 3 of the Vocational Rehabilitation Act, the Section 3 project can be considered terminated and, therefore, this report is required. However, the services are continuing and will continue to be provided for the full five year duration of the project. Although funding is now obtained through Section 2 monies, the services are still viewed by the Department as a separate experimental pilot project.

The record of the Cowell Project at its present stage of development is excellent. The academic and vocational achievement of clients in this project is above that of the average university student and/or rehabilitation client in California. (The grade point average of Cowell Program participants is 3.3 while the grade point average for undergraduates at Berkeley is 2.8.)

The California State Department of Rehabilitation will continue to fully support this project, the clients presently being served, and those who will be admitted to the program for the full five years during which the project is projected. At the present time, however, it would be premature to definitively evaluate the success of the project. The "Rolling Quads" fully concur in this (see page 21). The Department will continue to evaluate the effectiveness of this program and especially the continuing success of those students/clients who have and will become rehabilitated.

In the words of the students themselves,

> "Far beyond providing a facility to enable quadriplegics to complete a vocational program for eventual employment with a job commanding a salary commensurate with their living expenses, the Cowell Program fulfills other important needs. These needs are as real and as vital as the vocational rehabilitation process itself...
>
> As participants in the Cowell Project, we know its value and are deeply concerned with any plans being made for its present and future existence. We feel the project has demonstrated its success beyond the original expectations in exploring and overcoming problems faced by the severely disabled seeking a productive role in society."

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* With one exception, all the above references are reports of Research and Demonstration projects funded by the Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare. The project number, at the end of each citation, is followed, in parenthesis, by the fiscal year in which the project was activated, and the anticipated duration.

California State Department of Rehabilitation

COWELL HOSPITAL PROJECT

Table 1 - Client Characterists

February 1968 - November 1970

Clients	Sex	Age		Grade at Disab	Cause	Voc Goal	Home		Costs To Date	Referral Date	Status as of Fall 1970
		Disab	Now				City	County			
1	M	18	21	12	Football	Social Worker	Los Angeles	Los Angeles	$ 4,256	5/68	Junior
2	M	3	24	----	Auto Acc	Psychologist	San Francisco	San Francisco	6,102	2/63	Junior*
3	F	15	22	10	Swimming	Counselor	San Francisco	San Francisco	7,367	1/65	Junior
4	M	18	39	12	Diving	Acct or Tchr	Susanville	Shasta	10,740	3/64	Senior
5	M	17	24	12	Diving	Attorney	Weed	Siskiyou	11,803	10/67	Law School
6	M	20	29	13	Auto Acc	Accountant		Hawaii	3,173	6/68	Senior
7	M	17	29	12	Diving	Proj Director	Martinez	Contra Costa	18,978	8/58	Rehabilitated
8	M	8	29	4	Polio	Asst Prof	Moraga	Contra Costa	12,804	5/67	MA Candidate
9	M	birth	24	----	Congenital	Writer, Tchr	Quincy	Plumas	3,727	10/63	MA Candidate
10	M	18	23	12	Diving	Counselor	Loleta	Humbolt	4,151	11/65	Rehabilitated
11	M	birth	24	----	Congenital	Counselor	Los Altos	Santa Clara	8,539	6/68	Senior
12	M	14	31	8	Polio	Consultant	Burlingame	San Mateo	32,089	4/59	Ph.D. Candidate
13	M	19	32	12	Auto Acc	Teacher	San Mateo	San Mateo	2,363	2/70	Junior
14	M	23	26	18	Mtrcye Acc	Teacher		Pennsylvania	4,244	6/69	Ph.D. Candidate
15	M	birth	34	----	Congenital	Social Worker	San Mateo	San Mateo	9,020	5/67	Deceased
16	F	16	22	12	Auto Acc	Teacher	Napa	Napa	3,005	8/69	Junior
17	F	18	20	13	Auto Acc	Comp Progr	San Leandro	Alameda	5,682	1/69	Senior
18	M	19	24	13	Auto Acc	Bus Admin	Santa Rosa	Sonoma	7,169	8/66	Senior

*Academically a Junior but not presently enrolled in school.

California State Department of Rehabilitation

COWELL HOSPITAL PROJECT

Table 2 - Case Cost Estimates

Client #	Total Rehabilitation Costs Projected from Referral till Closure Per Case	Total Yearly Welfare Costs Without Rehabilitation
TOTAL	$216,542	$83,636
1.	13,800	5,736
2.	6,101	2,400
3.	9,766	5,400
4.	20,339	5,808
5.	17,802	5,400
6.	3,173	Not Eligible
7.	18,977	5,300
8.	22,404	5,400
9.	4,200	5,400
10.	4,150	4,440
11.	14,538	5,600
12.	21,263	4,560
13.	2,362	Not Eligible
14.	10,000	5,772
15.	9,019	6,120
16.	13,800	5,500
17.	11,680	5,400
18.	13,168	5,400
Average per Case	12,030	5,227*

*This average excludes the two cases not eligible.

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Rolling Quads open 'pit stop' at Alumni House

Without ceremony, a student group known as the Rolling Quads in October opened a new service facility in Alumni House. Dubbed "the pit stop," the facility provides a battery quick-charger, spare wheels, a few tools, some emergency rain gear, and a quiet corner to rélax in. While the pit stop's physical amenities are sparse, its emotional gratifications are more than might be expected from such a minor establishment, for it signifies that quads have become a regular campus feature. And this is newsworthy because the Rolling Quads are wheelchair-bound quadriplegics, paralized in all four limbs, whose success in pursuing a university education proves totally disabled to be a misleading term.

The Quads are an outgrowth of the pioneering Cowell Hospital Residence Program, established seven years ago with one student, which provides housing and special assistance for severely disabled students. Financed with combined federal and state funds, the Cowell program now serves eight resident students. The hospital functions as a kind of half-way house which, in the view of its director, Karl Ross, presents "a program to get the students out of the woodwork of their homes, teach them independent living, and enable them to get an education so they can function in the community as self-supporting and productive individuals."

Since its inception a total of 20 students have entered the program. Two dropped out, three have graduated and left the campus, another three are currently in law school at Boalt and Davis, and 12 others are still taking courses on campus but have moved out of the hospital. Both students and hospital staff consider the move out to be "graduation," and one sign of the program's success is that the average length of stay in the hospital has been shrinking over the years.

Another sign of that success is the existence of the Rolling Quads. The group, with some 25 members, was organized by a few of the first "graduates" of Cowell when they realized the necessity for concerted action in solving such common problems as transportation and housing. While they act as a pressure-group in dealing with the various agencies entering their lives (including the University and the State Department of Vocational Rehabilitation), the thrust of the Quads' actions, according to co-founder John Hessler, is to give them "lives not dependent on institutions."

To that end, they wrote up a proposal to the Department of Health, Education, and Welfare for funding of an office that would recruit handicapped students to the University, organize living accomodations, and provide job counseling and placement. The grant, $81,000 for one year's staff services, was approved in July, and Hessler, who recently took his M.A. in French, was selected as program director. One of his first actions was a pointed name change — the Physically Handicapped Students Program became the Office for Independent Living.

One of the first to get a charge at the pit stop was Judy Taylor, 22, a junior.

Dennis Galloway

California Cares
Published by
EASTER SEAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS OF CALIFORNIA

Vol. 24 SUMMER 1968 No. 2

Federal Grant Expands Program For Severely Handicapped Students At University of California, Berkeley

A special vocational rehabilitation program pioneered for very severely disabled students at the University of California, Berkeley, will be accelerated through a federal grant awarded by the Rehabilitation Services Administration to the California Department of Rehabilitation.

The number of students enrolled in the university's program will jump from 6 to 15 by the fall term and to 25 before the end of the five-year project. Federal funds of $44,000 a year will make possible extension of the program, which was launched in 1963 as a pilot educational project for one very severely disabled youth requiring hospital attention.

Cooperating groups are the Student Health Service at Cowell Memorial Hospital on the Berkeley campus, the California Department of Rehabilitation, and county welfare departments.

Students taking part must be qualified academically for admission and trainable for a vocation. The program includes the continuing provision of medical and vocational services to promote maximum development of independent functioning. Housing facilities are located in a special residential unit in the campus hospital.

Information concerning admission is available from Catherine Butcher, Counselor for the Severely Disabled, Oakland District Office, California Department of Rehabilitation, 1111 Jackson St., Oakland 94607.

They Go to Class by Electric Wheelchair

Campus Hospital Is Home for 6 Students

By GEORGE WILLIAMSON

Bearded Ed Roberts, 29, a political science teaching assistant and Ph.D. candidate, spends about half his hours in an iron lung when he has politicized with "McCarthy for President" and "Savio for State Senate" bumper stickers.

He is one of six quadriplegics who live — and often live it up, as a matter of raucous fact — as student residents of Crowell Hospital on the University of California's Berkeley campus. (Quadriplegics are people afflicted with paralysis in both legs and arms.)

Roberts, a polio victim, arrived at Berkeley five years ago as the first participant in a college live-in vocational rehabilitation project that remains unique in the United States.

'CRIPPLES' CREEK'

John Hessler, 27, now working for an M.A. in foreign languages, joined Robberts on Cowell's third floor—"cripples' creek," Roberts calls the dormitory-like setting—a year later, and four more were enrolled in the summer of 1967.

Their ranks may be swelled to 15 by next fall, thanks to a $40,000 annual federal grant announced last week. Cowell is now accepting applications for the openings.

"We want people who are academically admissible to the University, but who without hospital facilities probably wouldn't be able to get an education," said Cowell administrator Carl Ross.

But probably more importantly, he added, the hospital hopes to recruit newcomers with the same "tremendous drive these six guys have."

ACHIEVERS

This drive has carried them to impressive academic achievements, as well as some pretty wild extracurricular activities.

CAL'S EBULLIENT QUADS JOIN IN BULL SESSION
John Hessler, left, Jerome Frazee and Ed Roberts in iron lung
—Examiner Photo

All six rank academically in the top 25 percent of the campus student body, Ross reports.

Their night life is little less wicked in pace.

"Two of the younger guys particularly like to live it up," smiled a hospital official.

"They take off quite a lot," he added in an obvious understatement. "I don't know where they go."

No names were mentioned, but handsome, outgoing Larry Langdon, a psychobiology major, is 20. Jim Donald, economics and political science, is 22.

Rounding out the half dozen are Scott Sorenson, 32, and Jerome Frazee, 37, both psychology majors.

HAVE 'WHEELS'

The hospital does not restrict them in their comings and goings. With the exception of Roberts, all have electric wheel chairs which make them independent travelers.

"It's not uncommon for them to come in at one or two in the morning," said a hospital worker.

"And sometimes those chairs are swerving more than a little."

Each of the six has his own room. They share a day room for b.s. and occasional parties.

18

15

COWELL RESIDENCE PROGRAM ADMISSION PROCEDURE

1. Department of Rehabilitation home district will determine eligibility for VR services. Feasibility should be discussed with the Specialist for the Severely Disabled in the Oakland DR Office, Mr. Belchick, Tel. 415-464-1343 ;ATSS 8-561-1343.

2. Client will be ATD recipient or will have available funds necessary for room and board on Cowell Rehab Floor of $350 per month, plus attendant care costs.

3. Client will have possiblity for employment after graduation.

4. Client will require attendant care or training in self-care.

5. Client will be academically acceptable and have proof of academic potential.

6. Local DR file will be loaned to the Oakland DR Office for review.

7. If applicant appears appropriate, an interview may be requested by the Specialist for the Severely Disabled, Gerald D. Belchick, and:

   a) DR will provide client with the Cowell questionnaire (see attached) and direct client for clearance of adequate ATD funds.

   b) When the completed questionnaire is returned to Mr. Belchick client will be sent U.C. Medical History and Physical Examination forms for completion by both the client and his physician. There can be no admission without a completed U.C. Admission Medical.

   c) Client will write the Director of Admissions for an Application Form.

   d) When these are returned to Mr. Belchick they will be reviewed by the Cowell Rehabilitation Residence Committee. If cleared medically, client may be notified to make appointments with Carl Ross for an interview and with Dr. Berg for a psychological interview.

   e) Client will then be notified in writing of the decision of the Rehabilitation Residence Committee concerning his admission.

8. Oakland DR Office will attach a covering letter to the completed Admission Form giving current medical information and limitations and stating that if accepted client will be applying for residence at Cowell. DR will send these to the Director of Admissions, U. C. Campus, Berkeley.

9. Client will be informed that he will be expected to take a minimum of 8-10 units per quarter.

10. The local DR file will then be sent to the Oakland DR Office for authorization of services under the Project Grant.

11. Cowell responsibility will not cover vacation quarters.

MTS/GDB/nme
11/21/70 (Rev.)

COWELL HOSPITAL PROJECT

DISABLED STUDENTS LIVE-IN PROGRAM QUESTIONNAIRE

Please complete the following information and return to:

Henry B. Bruyn, M.D.
Director, Student Health Service
Cowell Memorial Hospital
University of California
Berkeley, California 94720

1. Please tell us about your quadriplegia or disability. (Use separate sheet.)

2. What is your means of transportation to get around? (An electric wheelchair is almost a necessity on the hilly Berkeley campus with scattered classrooms.)

3. What personal equipment will you bring with you, such as commode, pressure pad, flotation pad, special lift, respiratory equipment, etc?

4. What are your sleeping arrangements?

   What type of mattress do you use?

   Do you require turning at night? How frequently?

5. How many hours a day will you require an attendant? Dressing?

   What times of days? Bathing? Transfers?

   Will you arrange for your attendant care yourself or do you need assistance in hiring an attendant?

6. Please tell us in detail about the management of your disability at the present time. (Use separate sheet.)

7. List name and address of physicians who have had a major role in your care. <u>Please ask these physicians to send pertinent medical and laboratory reports regarding your current status to Dr. Henry Bruyn at the above address.</u>

8. Specify time spent at specific hospitals, rehabilitation centers or clinics:

9. Do you have chronic asthma, hay fever, or any respiratory problems requiring a Bird, respirator or other equipment?

10. Detail bowel habits and methods of control; suppository, enema, and digital.

11. Is sweating and/or heightened blood pressure a problem?

    How often?

12. What is your urinary output collection method?

    Detail catheter or condom procedures.

13. Are urinary tract infections a problem? How often?

    How are they controlled?

14. Do you have a regular program for the care of your skin?

    What is it?

    What is the frequency of skin ulceration?

    What medications or procedures do you use to prevent or treat skin problems?

15. Do you have any special dietary needs?

    Any foods to be avoided?

16. Is your immunization program up to date?

    Give latest immunization dates of tetanus: polio:

    mumps: Measles: influenza:

17. Are you allergic to foods or other substances?

    Are you getting allergen injections?

    What is your schedule?

18. What medications are you taking currently?

    Dosage? Frequency?

19. Do you wear glasses? Contact Lens? A Hearing Aid?

20. Are you on a physical therapy maintenance program?

How often?

What type?

21. Have you had previous counseling or psychological testing?

Experience with group or psychiatric therapy?

22. What caused your disability and when did it happen?

23. Please detail how you have learned to live with your disability.

Date_____

Name_____

Mailing Address_____

_____

Telephone Number_____

Date of birth_____

Type of disability_____

# of units of College work completed

_____

Grade point average_____

Previous college attended_____

_____

Sex_____

Major_____

Professional objective_____

PROGRAM EVALUATION & RECOMMENDATIONS

by

"The Rolling Quads"

As participants in the Cowell Project, we know its value and are deeply concerned with any plans being made for its present and future existence. We feel the project has demonstrated its success beyond the original expectations in exploring and overcoming problems faced by the severely disabled seeking a productive role in society. Because of this success, we feel the program must be expanded to make its benefits available to a greater number of quadriplegics in the State of California.

The Purpose of the Cowell Project as Stated in the Grant Application

"The purpose of the project is to make available to severely disabled clients attending the University of California at Berkeley a residential unit that will provide specialized services such as medical consultation, rehabilitative nursing, physical and occupational therapy, and other ancillary services necessary to maintain their health and strength at maximum levels. Experience has shown that such specialized services are often required to enhance the severely disabled student's capacity to engage in an academic program which is essential to vocational rehabilitation."

The rehabilitation team at Cowell, with cooperation from the Student Health Service, has been outstandingly successful in maintaining the health and strength of clients in the program. Interruptions in the academic program of students because of medical complications arising from disabilities have been minimal. Equipment for maintaining strength such as exercise pulleys, trapeze, standing table, etc. has been made available. "The number of recommendations for academic adjustment due to medical problems has been remarkably small in this group of quadriplegics" (Henry Bruyn, M.D., Director, Student Health Services).

Far beyond providing a facility to enable quadriplegics to complete a vocational program for eventual employment with a job commanding a salary commensurate with their living expenses, the Cowell Program fulfills other important needs. These needs are as real and as vital as the vocational rehabilitation process itself.

The tremendous social adjustments so necessary for successful rehabilitation are greatly enhanced in the unique group setting provided by the Program. A situation involving many people with common problems promotes a feeling of security through a healthy group identification. Mutual learning occurs from the disparity of the length of time individuals have been injured, the variety of ages, and the co-educational nature of the living conditions. The informal exchange of ideas and techniques among quadriplegics is the most important aspect of this learning process. The practical experiences quadriplegics acquire after instructional learning in a rehabilitation center is transmitted through day-to-day interactions. Over the years people have modified and adapted various self-care methods to suit their own needs. By observing the inventiveness of others within the group one can gain an insight into solving his own problems and can achieve the maximum use of his physical abilities.

The social isolation so common to the severely disabled is broken down by the fact that this is an on-campus program. By using electrically powered wheelchairs one gets a feeling of mobility and independence which can be obtained in no other manner. Because of the openness of a student

orientated social structure, one can find acceptance on a level unknown in the general populace. All these factors contribute greatly to the mental health of an individual facing an uncertain future.

Along with the expansion of physical abilities, the social dynamics within the group generates a broader perspective on life. This new awareness enables one to re-evaluate the future with greater self-confidence. Independent living now becomes a realistic goal. The success of former members of the Project in achieving this goal inspires others to do likewise. The trend of newer members is towards a shortening of the time spent at Cowell. Because of this, the concept of Cowell has changed from a long-term residence unit to a place of transition which prepares the client for the eventual return to the community. The economic repercussions of this trend toward shorter residency should be explored.

Success

We feel that the success of the Project cannot be equitably measured at this time.

Need for Cowell Program and Its Expansion

Our group has been in contact with social welfare caseworkers, rehabilitation counselors and disabled individuals throughout the state. Their response indicates an obvious apprehension and lack of incentive on the part of quadriplegics to embark on a vocational rehabilitation program because of the following reasons: (a) medical complications brought about by lack of proper medical consultation, (b) additional demands placed upon the individual's family, (c) distance from the home to an educational institution offering a program at the graduate level, and (d) an absence of information about a situation which affords an opportunity to explore and develop their full capabilities. These factors are common to all quadriplegics who wish to seek a productive role in society.

There is an ever-increasing number of inquiries and applications to the Cowell Program from throughout the state from disabled individuals and persons involved in rehabilitation. This indicates the motivation of the severely disabled to pursue a vocational goal when offered services which solve the problems inherent in such an undertaking.

Since participants and applicants are from numerous counties throughout the state it seems evident that funds for the Cowell Program should be allocated on a statewide basis.

We in the Cowell Program would like to participate in the decisions made concerning the Cowell Program. We solicit your help in implementing our recommendations for creating a more effective rehabilitation service.

Our Recommendations are as follows:

1. The expansion of the program to more quadriplegics in the state.
2. The broader education of professional personnel - rehabilitation counselors, welfare workers, doctors, nurses, teachers, counselors psychiatrists, psychologists - regarding this special program and the goals which it makes available for the severely disabled.
3. The opening of University dormitory facilities to the severely disabled. (Use of these dormitory facilities, because of architectural barriers, is now denied to certain disabled clients but are available to qualified, able-bodied students. We consider this to be discrimination against the disabled student.)

"The Office for Independent Living"

The students in the Cowell Residence Program have organized themselves into an action group in order to bring about what they feel are needed services. These services include: community surveys to uncover available adequate housing; development of a transportation system consisting mainly of van type vehicles so [illegible]udents in wheelchairs can ride about safely and comfortably; seeing tnat campus and community planners take into account physical barriers when building or remodeling; and informing people about the program, its goals and how they are going about the job of helping themselves.

This group has formed itself into an officially recognized University student organization, -- the "Rolling Quads." They have spent much of their spare time delineating the basic problems of the disabled student on campus and have worked toward solving these problems. During the course of their collective effort they have created the "Office for Independent Living" (the Handicapped Student Center) which is directed by John Hessler, a successful graduate of the Cowell Residence Program. This office, funded by a Special Services HEW grant, has been set up to coordinate the various programs instituted by the Rolling Quads.

Several students have asked the office to help them set up in-community housing situations. Since the ultimate goal of the Cowell Residence Program is to aid the physically disabled person in becoming independent emotionally and financially, the move into the community can be seen as a very important step in the individual's struggle towards independence. Residences have already been found for four students to live in the community.

On campus and in the immediate area, the electric powered chair has proven to be a satisfactory means of movement, especially where physical barriers such as curbs have been eliminated through the use of ramps. The members of the program are responsible for getting many such ramps installed both on and off campus. For students not living at the Cowell Residence transportation is still a major problem. Anything beyond a fifteen block radius is usually out of range for a powered chair both in terms of battery life and physical comfort. A van transportation system was needed.

The group needed to raise money for such a system. This has been done by getting the entire student body at UC to vote a 25¢ per quarter increase in student fees.

Students who have lived or are living in the Cowell Residence Program are continually corresponding with persons who are interested in the project. These include parents of disabled students or disabled students themselves who would like to enter the program. Many people from other universities who have heard about the program came to talk with the students. So far, all of the university people who have seen the program in action have left saying that they would like to set up a similar program on their campuses.

The members of the Cowell Program are very proud to be taking part in this effort to help themselves and their fellow disabled students.

CASE ABSTRACTS

1. This client was referred to Rehabilitation in December 1967. Client sponsored at the University of Redlands prior to transferring to the University program at Berkeley in September 1970. Expenditures for this client by the Department are $4,255 shown charged to the base program. His goal is tentative with consideration for graduate work in psychology or an M.S.W. Goals include social welfare, vocational rehabilitation or clinical psychology. Welfare aid amounts to $478 a month for ATD and attendant care. Projecting another 32 months of school, which will amount to $9,600, the total expenditures by the Department will come to $13,800. This amount will be offset in a little over two years if this individual is enabled to engage in a professional job.

2. Client was referred to Rehabilitation February 1963, placed in plan in June 1963, and sent to San Francisco City College. First goal was accounting which was later changed to psychologist. Started at U. C. September 1969. Has been on ATD since 1964. Client has had many medical problems and has not done well at school. Department has provided services in the amount of $6,101 of which $4,322 came from the base program and $1,779 from the Cowell Project. Client is presently not at school.

3. Client was referred to Rehabilitation in January 1965. She was started at San Francisco City College where she had two years of school and transferred to U. C. and the Cowell Project in August 1968. She first chose to become a speech therapist and changed her major to social welfare with the prospect of employment in the Disability Determination Program as a trainee. She is able to write and carries a full course at the University. She has been on ATD since 1968 and also receives attendant services, the total amounting to $450 a month. The Department has provided $7,366 worth of services of which $463 came from the base program and $6,903 came from the Cowell Project. Applicant should complete her work in 1971 which will require eight more months of services accounting for $2,400. The total expenditures by the Department for this client will amount to $9,766. The applicant will earn approximately $8,000 a year as a trainee and at the end of one year will be eligible to work as a journeyman at around $10,000 a year. Termination of welfare benefits will offset the rehabilitation expenditures in less than two years.

4. This client completed the 12th grade before his accident and had no other training. He was referred to Rehabilitation in March 1964. He was interested in mathematics prior to starting rehabilitation. Testing indicated an ability to continue with mathematics and program was developed to send him to Junior College to pursue a goal of teaching in mathematics. He completed Junior College in 1967 and started U. C. in January 1968. He will receive his B.A. in Business Administration in 1971 and tentatively will continue for an M.A. which he should obtain in 1973. Prospective employment is as an accountant. He presently resides at Cowell Hospital. He receives $184 a month ATD and $300 for attendant care. The Department has expended a total of $10,739 on this client of which $1,079 was charged to the base program and $9,660 was charged to the Cowell Project. If this client were to contine school to 1973 an additional amount of $9,600 would

be expended for a total of $20,339. His benefits from welfare amount to $5,800 a year so that with the salary which an accountant should earn, rehabilitation benefits will be offset in approximately three and one-half years.

5. Client became disabled in May 1963. First referred to Rehabilitation in September 1963. Case was closed in March 1966 because of inability to continue school because of illness. Case was reopened in October 1967. Several objectives were selected before the present one of law was chosen. Referred to the Cowell Program in May 1968. Has been on ATD since 1964 and is presently receiving ATD and attendant care in the amount of $450 a month. He is presently a student at Boalt Hall (law school) at U. C. as an honor student, is receiving scholarship money from Boalt Hall. Rehabilitation has provided the client with $11,802 of services, $782 from the base program and $11,019 from the Cowell Project. It is anticipated that client will complete his training in 1972. Projecting 20 months of services which will cost an additional $6,000, the total money expended by the Department will amount to $17,802. With the applicant receiving $5,500 a year from welfare it will take three years for rehabilitation expenditures to be offset by the termination of welfare benefits. This applicant should earn more than $10,000 a year after passing the Bar.

6. This client became disabled in May 1961 and was referred to Rehabilitation in June 1968. He is not receiving any welfare aid because of personal income. The Department has expended $3,173 on this client of which $413 came from the base program and $2,760 came from the Cowell Project. He is a resident at Cowell Hospital and is paying hospital costs. The Department has not paid for any maintenance or transportation. His goal is for general accounting and specialization in stocks and bonds. It is anticipated that his program will be completed in 1972.

7. This client was disabled in May and referred to Rehabilitation in August 1958. He was provided training at a Junior College along with books, supplies and various other needs and also was sent to the Monterey Foreign Language School at Monterey, California. He had welfare benefits that consisted of ATD and attendant care in the amount of $440 per month. He graduated from U. C. Berkeley in June 1970 with a Master's degree. He started in the University of California in 1963 and received his Bachelor's degree in 1966 and started on his Master's degree in September 1966. During his schooling he was a teaching assistant. He is presently employed as a Project Director at the Center for Handicapped Students in the Dean of Students' office at the University at a salary in excess of $11,000 per year. Expenditures by the Department amounted to $5,302 under the base program and $13,675 under the Project for the two years of 1969-70 which totaled $18,977. Welfare aid amounted to $5,300 a year so that the expenditures provided by vocational rehabilitation will be offset in less than four years of employment. From all indications, it seems that this individual is well placed in his employment and should get along without any problems. Case closed rehabilitated.

8. This client became disabled in 1950 at age eight due to poliomyelitis and must spend time in a respirator. His condition is apparently stabilized with no abnormal problems for his illness. He was referred to Rehabilitation in May 1967. He had no work history prior to referral. He

completed his undergraduate work at St. Mary's College where he received a B.A. degree in June 1969. Services were provided him while still a student at St. Mary's. He entered the Cowell Program in June 1969 and is presently working toward a Ph.D. in history. Prospects are for him to become an assistant professor in Latin American History at St. Mary's College. It is anticipated that he will complete his work in 1973. He is receiving $450 a month for ATD and attendant care. Projecting rehabilitation services for another 32 months at approximately $300 a month, $9,600 additional will be expended on this client in addition to the $12,804 which has been provided, of which $7,079 was charged to the base program and $5,725 was charged to the Cowell Program. The total expended by Rehabilitation for client would then amount to $22,404. Welfare benefits for this client come to $5,400 a year. This client should earn at least $7,500 a year to start so Rehabilitation expenditures should be offset by about four years of employment. The counselor feels confident the client will be employed as planned since he has lived in the area where the school is located, is well known there, and attended college there.

9. This client is congenitally disabled with a diagnosis of Oppenheim's Disease. He was referred to Rehabilitation in September 1963 and placed in plan in January 1964. He was provided correspondence courses and was sent to Chico State College, Yuba Junior College and had one year at U.C. Davis. He graduated from U. C. Berkeley in January 1970 and is presently enrolled at San Francisco State specializing in creative writing. Vocational objective is to work in the editing field for a publishing company and to write short stories. He drives a car and is quite mobile. Welfare consists of ATD and attendant care totaling $450 a month. He will complete his training in 1971. The additional amount needed for the next eight months should not exceed $500 so the total expenditures for this client will be $4,200. When this applicant obtains work it should take less than one year to offset expenditures provided by the Department.

10. Client became disabled in July 1965 and was referred to Rehabilitation in November 1965, four months after his disability. Client was counseled in a four year college program leading to a degree in social welfare. In October 1969, he got married and is living with his wife off-campus. He also drives a car with hand controls. He received his B.A. degree in June 1970 and is presently employed as a counselor in the Physically Disabled Students' Program working in the Dean's office at the university. He receives a salary of $8,500 a year. Services provided by the Department cost $4,150 of which $117 came from Section 2 funds and $4,033 was charged to the Cowell Project. In September 1969, welfare benefits were reduced to $370 a month from the usual amount. This reduced amount of welfare aid of $4,440 a year will offset the rehabilitation expenditures of $4,150 in one year. Case closed rehabilitated.

11. Client is congenitally disabled due to amyotonia congenita. He was referred in July 1966 but did not receive rehabilitation services because family first refused them. This individual has a severe impairment with a severe scoliosis and respiratory problem. He has made tremendous progress and is living on his own while attending school. File indicates he is doing well socially, academically and physically. He is a social welfare major and has prospective employment with Disability Determination Program

as a trainee. He should complete his training in 1972. He is receiving ATD and attendant care amounting to $470 a month for a total of $5,600 a year. The Department has provided $8,538 for services and with an additional $6,000 for 20 more months of services the total expenditures by the Department will amount to $14,538. With applicant going to work as a trainee at approximately $8,000 a year with a potential for increasing salary after the first year to journeyman at $10,000 a year, welfare benefits can be terminated and rehabilitation expenditures will be offset in less than three years.

12. This client became disabled on February 1953 and was referred to Rehabilitation in November 1957. He had poliomyelitis and requires breathing assistance daily. He attended College of San Mateo prior to transfer to the University of California. He will receive his Ph.D. in history in June 1971. He has had several job offers from various Federal agencies including HEW, to act as a consultant on Federally funded projects for the severely disabled. He is presently being flown to Washington by HEW as a consultant for these programs. An anticipated salary would be in excess of $10,000 per year. In July 1969, he was receiving $455 per month under welfare which consisted of ATD and attendant care. This was reduced to $380 in August 1969 apparently, based on the fact that he was earning approximately $120 per month working in the Dean's office. Total expenditures on this client consists of $21,263 from the base program and $10,826 under the Cowell Project making a total of $32,089 through November 6, 1970. Plans are for the client to complete his academic training by the end of June 1971. He will therefore need eight more months of financial assistance from the Welfare Department and Department of Vocational Rehabilitation. Since this client is eligible for $380 per month from welfare which would amount to $4,560 per year, it would take approximately seven years for him to offset the expenditures made by the Department.

13. This client became disabled in March 1957. He completed the 12th grade and did service station work for about one year. He resides at Cowell Hospital. He attended San Mateo Junior College for two years prior to referral. He was referred in February 1970. His major is business administration looking towards employment in property management, real estate or general accounting. This client is not eligible for welfare support as he has an income from property. It is anticipated that he will complete his training in 1973. Rehabilitation services have amounted to $2,362 of which $10 is charged to the base program and $2,352 to the Cowell Project.

14. This client was referred to Rehabilitation in June 1969. He had been working as a computer systems assistant for three months. Originally from Pennsylvania, his goal is to get a Ph.D. in community planning and teach. He is eligible for services under the Trust Fund Program. Plan calls for program costing an additional $6,148; $4,243 already expended. Client is receiving $71 ATD and $300 for attendant care. He receives $110 a month S.S.D.I.B. It is reasonable to project that this client will obtain employment in his chosen goal and will earn a salary enabling Welfare and Social Security benefits to be terminated. Total rehabilitation services should amount to approximately $10,000. With $5,772 a year for welfare benefits which should be terminated when client goes to work, it should take approximately two years for rehabilitation costs to be offset. This man is presently in another counselor's caseload.

15. This client was referred to Rehabilitation in May 1967. The Department provided services in the amount of $9,019 of which $2,842 came from the base program and $6,177 was provided from the Cowell Program. Total welfare support amounted to $510 a month. The case was closed in status 28 as client died in April 1970.

16. This client was referred to Rehabilitation in August 1969. Her goal was to teach in a Junior College and consideration is currently being given to the field of speech therapy. Client is a resident at Cowell Hospital. It is anticipated that she will complete her work in 1973. She receives ATD and attendant costs from the Welfare Department. Rehabilitation has expended $3,005 of which $800 came from the base program and $2,205 came from the Cowell Project. Another 36 months of services will amount to $10,800; total costs for her program by Rehabilitation will amount to $13,800. At $5,500 a year for welfare expenditures, the rehabilitation costs of this program will be offset in a little over two years. If this young girl enters the teaching profession, she should be earning a salary which will considerably reduce welfare aid with total aid being completely terminated in just a few years.

17. This client was referred to Rehabilitation in January 1969 at age 18. She had completed one year of college prior to her injury and worked as an engineering student trainee in the summer she was injured. Her goal is tentatively for either computer programming or an M.A. in mathematics. It is anticipated that she will complete her work in 1972 with the prospect of employment in some phase of computer work. She receives $450 a month for ATD and attendant care. The Department has provided $5,681 worth of services of which $1,375 came from the base program and $4,306 from the Cowell Project. If the Department provides another 20 months of care, which will amount to $6,000, the total expenditures on this client by the Department will have come to $11,680. She is a resident at Cowell Hospital. If client obtains employment in indicated field earning a salary in excess of $9,000 a year, rehabilitation costs can be offset in savings of welfare benefits in less than three years.

18. This client became disabled in an auto accident while in his first year of college. He was referred to Rehabilitation in May 1967. His major was civil engineering at college before his accident. His major at U.C. is social service. It is anticipated he should complete his work in 1972. He is thinking of Social Welfare and also considering Vocational Rehabilitation. He is a resident of Cowell Hospital. His welfare benefits of ATD and attendant care are about $450 a month. The Department has expended a total of $7,168 on this client of which $1,190 came from the base program and $5,978 came from the Cowell Project. Extending his program to 1972 will require another $6,000. Thus, the total expenditures for this client by Rehabilitation will amount to $13,168. With the current rate of welfare aid of $5,400 a year, Rehabilitation expenditures should be offset in less than three years since client would enter rehabilitation work as a trainee and would earn approximately $8,000 a year.

(The above case summaries were abstracted with the assistance of Mr. Irving Atlas, Program Analyst.)